TASK
ENVIRONMENTAL

SITE: Chevron Ortho
BREAK: 3.10 V.6
OTHER:

November 6, 1994

Mr. Randy Bryant
Remedial Project Manager
EPA Region IV
345 Courtland Street
Atlanta, Georgia 30365

Subject: Chevron Orlando Site, Remedial Investigation Report

Dear Mr. Bryant:

Enclosed herewith are five copies of the final Remedial Investigation Report for the Chevron Orlando site. We are submitting this report to you on behalf of our client, Chevron Chemical Company. This report was prepared by TASK Environmental, Inc. and PTI Environmental Services, Inc. (Boulder, Colorado).

To minimize the waste of paper, we have not reproduced Appendix A, B, C, or D, since these appendices were not modified. We have provided copies of revised Appendix E, and new Appendix F. These appendices should be added to Volume 3 for the previously submitted draft RI Report.

To assist in the review of the final RI, we have provided separate responses to the comments which were prepared by EPA for the draft RI. The comments are attached, with our responses shown in italics.

In review of the Baseline Risk Assessment (Black & Veatch, 1994) we identified some inconsistencies in the treatment of groundwater contaminants and identification of contaminants of concern (COCs). Chlorobenzene, xylenes, and arsenic are identified as COCs in the risk assessment even though these compounds are present in concentrations well below the MCL. The risk-based remedial goals for arsenic are several orders of magnitude lower than the detection limits. Naphthalene has also been added as a COC, although there is no MCL for naphthalene. The basis for inclusion of naphthalene is not clear, since it does not exceed the EPA Region III screening value, which Black & Veatch used as a criteria for selection of COCs. Since the identification of COCs, and presentation of risk-based remedial goals differ significantly (in some cases) from those that were identified during preparation of the draft RI, we were unable to address the fate and transport of all of the COCs in the final RI.

The BRA also used an incorrect data set to calculate exposure point concentrations for chemicals detected in onsite soil. We have tabulated data sets for surface soil (0 to 1-foot BLS) and deeper soil (1 to 10-feet BLS), and have presented the data in Chapter 4.0. It appears that the BRA used only the 1992

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Removal Action confirmation sample analytical results, which are representative of soil from the base of the excavated areas. All of the areas represented by the confirmation samples have been backfilled with at least 1-foot of clean soil.

We would like to discuss the Baseline Risk Assessment with you before the Feasibility Study is finalized, since the remedial goals which have now been identified may change the approach to site remediation. If you have questions regarding this report, please contact Jeff Wyatt, Chevron Chemical Company (510) 842-5883, or me.

Sincerely,

TASK ENVIRONMENTAL

Susan Klinzing Tobin, PG
President

cc: J. Wyatt
A. Davis

SITE: _____
BREAK: _____
OTHER: _____

EPA REVIEW COMMENTS ON DRAFT RI REPORT
CHEVRON CHEMICAL NPL SITE

GENERAL

EPA has completed its initial review of the RI report, but additional comments may be forthcoming. The report generally follows EPA guidance for content and organization of a RI report. Extensive material has been presented regarding the fate and transport of organic compounds in groundwater.

However, additional discussion and evaluation of the potential mobility of metals in groundwater should be provided. Apparently, the source and extent of metals in groundwater have not been fully delineated. At a minimum, the RI should further evaluate the potential mobility of metals such as lead and chromium using existing data. Such data may include redox conditions, estimated groundwater velocities, etc.

This information has been added to the RI as Section 5.7.

The RI should consolidate all sampling data to be used in the Risk Assessment. Therefore, please include the most recent verification/confirmation data from the removal.

Data used by Brown and Caldwell Consultants to calculate the effectiveness of the 1992 Removal Action has been added to Chapter 4.0.

Also, after your receipt of the revised Risk Assessment, please ensure consistency of the RI with the Risk Assessment. This will include such items as contaminants of concern, etc.

The RI has been modified to address the COCs identified in the Risk Assessment. However, since the Risk Assessment was completed after the K_d studies, biodegredation studies, and groundwater modeling were completed, it was not possible to thoroughly address all of the COCs identified in the Risk Assessment. Further, some inconsistencies in the identification of COCs and risk-based remedial goals must be addressed. Several of the COCs now have remedial goals well below the associated MCL. For arsenic, the remedial goals are orders of magnitude below method detection limits. The Risk Assessment also appears to ignore background concentrations of chromium, and does not include lead as a COC.

SPECIFIC

1. Page ii, List of Figures: Please provide a figure, similar to Figure 4-3, which shows the groundwater concentrations for xylene through September 1993.

   This figure was added to Chapter 4.0, as Figure 4-13.

2. Page E-7, second bullet: Ethylbenzene was detected at a concentration of 2,000 ppb in MW-8S.

   This typographical error was corrected.

3. Page E-8, last paragraph: If the presence of DEHP is due to sampling equipment, then it should have been detected in quality control samples, such as the equipment blanks. If not, then delete this sentence. Also, correct the phrase, "...and each was detected in only one (poet Removal Action) well."

   The presence of DEHP in the groundwater sample from Hawthorn formation MW-14 is probably related to the plastic hose that was attached to the submersible pump used to purge this well. Small fragments of the hose were shaved off the hose by the sharp rim of the stainless steel casing. Since DEHP was not detected in any of the shallow monitor wells, and since it is virtually insoluble in water (and thus immobile in groundwater), we have no information to support a conclusion that the DEHP is a site contaminant. However, the sentence was removed from the RI. The typographical error "poet" was corrected.

4. Page E-9, second full paragraph: Does the last sentence, "Removal of these source areas...," refer to additional excavation to be conducted on-site?

   The sentence referred to additional excavation. This sentence has been reworded in the RI to avoid further confusion.

5. Page E-9, third full paragraph: The last sentence should be revised or deleted given that metals are COCs and biodegradation is not expected to reduce the metals concentrations.

   This sentence was revised.

6. Page 1-2, second paragraph: What endpoints were used to establish a distance of 1,000 feet between the Site and Lake Fairview? A distance of 700 feet seems more realistic.

   The distance to Lake Fairview has been changed to 700-feet.

7. Page 2-6, first paragraph: One sentence indicates that several wells,

including MW-3S and MW-3D, could not be sampled during the Phase II sampling. However, analytical data from Phase II for these wells are presented in other sections of the RI report.

MW-3S and MW-3D were damaged during the Removal Action and could not be sampled during Phase 1. New wells were constructed to replace these wells during Phase 2.

8. Page 3-4, last paragraph: Is there now or has there been any surface water runoff to the southwest as reported in the Site Screening Report (NUS, dated July 1990)?

The pre-Removal Action site drainage map included in the Contamination Assessment Report (BCC, 1990) suggests that a small portion of the southwest corner of the site may have drained to the southwest, and off-site. However, this conclusion was based on visual observations and not on measured topography. We have added a sentence to page 3-4 to state that runoff in the southwesterly direction may have occurred.

9. Page 3-16: What is the distance to, and approximate location of, the nearest private drinking water well?

The distance to the nearest private well was added to page 3-16. However, we did not field verify that the well is currently used for drinking water supply.

10. Page 4-4, Table 4-1: It is difficult to determine if the data from table 4-1 of the RI was a subset of the data used to calculate the 95% UBCI of the average chlordane concentration in soil remaining onsite. Under separate cover, specify the data used in those calculations.

We have added two tables to the RI to clarify the UBCI calculation. Further evaluation of these data will be provided under separate cover.

11. Page 4-33, last paragraph: What explanation is offered for the presence of lead in monitoring well 3S? The lead concentration averaged 200 ppb for the most recent sampling event.

The lead detected in MW-3S is present in a concentration which is too high to be dissolved lead given the redox conditions at the site. An explanation of the occurrence of metals in the groundwater samples has been provided in Section 5.7.

12. Page 4-36, first paragraph: References to Hubbard Construction and Unocal should be deleted unless conclusive data establishing these properties as sources is submitted.

These references have been deleted. However, they remain potential source areas. Contamination assessments were conducted by others for these sites under the FDEP program for petroleum contamination. The Hubbard property is currently undergoing groundwater remediation for petroleum contamination. As you know, we were denied access to the properties located to the south of the site, and were therefore unable to confirm upgradient groundwater quality.

13. Page 4-36, second paragraph: Provide data and references to support the hypothesis that chromium in groundwater may have been released from septic tanks in the area.

This reference has been added to the text.

14. Page 4-36, last paragraph: Delete the last sentence regarding the insignificant health risk of 1,4-dichlorobenzene. Such statements are more appropriate in the Risk Assessment.

This sentence has been deleted.

15. Page 5-31, last paragraph: Identify any analytical results from the monitoring wells that indicate the presence of degradation by-products of the contaminants of concern.

Groundwater samples were not analyzed for the major degradation products of lindane, because standards for these compounds are not available and would have been prohibitively expensive to synthesize. Standards were available for minor degradation products, and two of the biodegradation samples were analyzed for these products. However, the method detection limits for this experimental research project were elevated (10 ug/L), resulting in non-detects for these compounds. Consequently, subsequent samples were not analyzed for these compounds.

ADDITIONAL REVIEW COMMENTS ON DRAFT RI REPORT CHEVRON CHEMICAL NPL SITE

1. It would be helpful to provide a set of maps showing concentrations of site contaminants in areas where soil has not been removed. These maps should show the footprints of the former buildings on the Site. Such information may be helpful to the State as it evaluates the remedial actions completed to date.

Figure 4-1 has been included to show the locations of samples outside of the areas of excavation. Also, maps from the Removal Action Report showing all Removal Action sample locations have been reproduced, and are included in Appendix F.

2. Tables such as 1-1 and 4-3 should be reviewed and revised to ensure that contaminants present above MCLs or other risk based levels are properly identified. The frequency of detection and the detection limits for the groundwater contaminants should also be reviewed to ensure that the contaminants of concern are properly identified. Consistency with the draft Risk Assessment, currently under review by EPA, will be necessary.

We have revised the RI to address the COCs identified in the Risk Assessment.

3. Table 2-2 lists the substances used in the biodegradation experiments. Please add further text explaining how these substances are representative of the existing groundwater conditions at the Site. Methanol was not found in groundwater, but was used in the experiments and could act as an additional food source for the microorganisms,resulting in nonrepresentative biological growth. Other parameters found in groundwater were not used in the experimental mixture.

Methanol was used in the experiments to solubilize the pesticides, since their solubility in water is low. The methanol added represents less than 1 percent of the total organic carbon present in the soil used in the experiments. Because variability in the analytical results is greater than 1 percent, the effect of adding methanol to the system is negligible.

4. Section 2.2.4 describes the use of the SUTRA model. Both the input and output files should be included in the final RI report to aid in a comprehensive review of the report.

Input files were previously provided. Output files have been added to Appendix E.

Also, given that dispersivity and porosity values used in the model are not site specific but are based on literature values, it may be useful to conduct a sensitivity analysis for these parameters. A sensitivity analysis may be of use for some of the model boundary conditions where constant heads were specified for areas where the water table may not be constant.

A sensitivity analysis had been conducted, and was addressed in the draft RI. A more detailed discussion of the sensitivity analysis was added to Appendix E.

5. Section 3.3.1 refers to the pumping test and its effect on the deeper aquifer. Please provide any additional data to support the conclusion that the deep aquifer is not connected to the surficial aquifer.

Literature information was referenced in this section to describe the leakance between the two aquifers and the deeper Floridan aquifer zone that is used for municipal water supply. We did not conclude that the deep aquifer is not connected to the surficial aquifer, but that contaminants are not migrating through the clay confining unit into the Floridan aquifer.

6. Section 6.2 refers to some remnant zones of the petroleum layer floating on the shallow aquifer. These areas may act as ongoing sources for groundwater contamination and should be further discussed in the RI and FS.

The discussion of remnant zones of petroleum was prepared as a possible explanation for continuing sources of groundwater contamination. The petroleum layers identified prior to the Removal Action were excavated during the Removal Action. Since the Remedial Investigation field sampling has not identified remaining layers of petroleum, we have minimized the discussion of floating layers of petroleum products in the final RI.